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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,504	08/01/2001	Shahzad Akbar	2001 P 09899	7086

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EXAMINER

MOHAMEDULLA, SALEHA R

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/920,504

Applicant(s)

AKBAR, SHAHZAD

Examiner

Saleha R. Mohamedulla

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20, 36, 37, 39, 40, 42, 43, 45, 46, 48, 49, 51, 55, 56 and 58 is/are rejected.
- 7) ☒ Claim(s) 21-35, 38, 41, 44, 47, 50, 52-54, 57 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claims 1-58 are pending. The objections to the abstract, specification, and claims are withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20, 36, 37, 39, 40, 42, 43, 45, 46, 48, 49, 51, 55, 56 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over US# 6,440,617 to Deng et al. in view of US Pub # 2002/0115001 to Hsue et al.

Deng teaches a photomask structure with anti-electrostatic-discharge ability. Figure 1 shows the mask. The photomask possesses a pattern 102 formed on one side of the photomask. The photomask can be formed of quartz and the pattern 102 can be made of chromium (col. 2, lines 29-32). Quartz is also known as fused silica. Deng teaches that the photomask and the pattern 102 are enclosed by a conductive structure 103, which comprises a conductive dust pellicle 108, a conductive frame 106 and a conductive film 104 (col. 2, lines 33-37). The conductive dust pellicle is formed of a material which has a conductive and high transparent ability. The conductive pellicle can be polymer (col. 2, lines 44-46). Therefore, Deng teaches a substrate 100 having a front face and a back face. Since the substrate is made of quartz, it is transparent to light. Because Deng teaches a photomask, it is inherent that the pattern 102 is

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permanently applied to the face of the substrate. Because Deng teaches that the pattern is made of chromium, Deng teaches that the pattern is opaque to light. Deng teaches that the conductive structure 103 comprises the pellicle 108, which is highly transparent. As shown in Figure 1, the structure covers the pattern 102 and areas of the face not covered by the pattern 102. Therefore, Deng teaches a conductive film which is transparent to light and deposited so as to cover the portions of the face not covered by the pattern. Therefore, Deng teaches limitations of claims 1 and 36.

Because the pattern is also covered, Deng teaches limitations of claims 2 and 37. The conductive structure 103 includes film 104 that covers the back face of the substrate and film 106, therefore a Faraday cage is formed around the substrate. Therefore, limitations of claim 3 are met. Quartz is fused silica, the pattern is made of chromium and the conductive film is made of polymer, therefore, limitations of claims 6, 7, 9, 10, 12, 13, 14, 16, 17, 18, 20, 39, 40, 42, 43, 45, 46, 48, 49, and 51 are met.

Deng does not teach the limitations of claim 4 drawn to the chromium pattern being permanently secured to the conductive film. Hsue teaches an electrostatic effect free mask. In Figure 3, Hsue teaches a side view of the mask. Hsue shows a substrate 30, a chrome film 31, a layer of chrome oxide 32 and a layer of conductive polymer 33 (paragraph 0016). The purpose of the conductive polymer layer is to prevent two adjacent patterns from electrostatic discharging effect. The material of the conductive polymer is transparent to light (paragraph 0017). Figure 4 shows a front view of the mask. Hsue shows the desired patterns and the transparent conductive polymer layer 33 deposited on the surface of the desired patterns (paragraph 0018). Therefore, Hsue teaches that the conductive film covers all of the front face of the substrate as shown in

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Figure 3 and that the opaque pattern is permanently secured to the conductive film as the opaque chromium pattern is attached to the conductive film. Therefore, the conductive film is in contact with the opaque pattern. Hsue also teaches that the conductive polymer is deposited to over a hundred angstroms, therefore, the limitations of claims 55, 56 and 58 are obvious.

The references are analogous art as they are drawn to photomasks having electrostatic discharge protection. It would have been obvious to one of ordinary skill in the art to deposit the conductive layer of Deng directly onto the chromium pattern of Deng in order to prevent two adjacent patterns from electrostatic discharging and prevent damage to the actual circuit patterns (paragraph 0017). One of ordinary skill in the art would have a reasonable expectation of success as the materials for the conductive layer and opaque pattern in Deng are similar to the materials in Hsue. In addition, Hsue teaches that the existence of the conductive polymer layer will not affect exposure or development processes (paragraph 0018).

Allowable Subject Matter

3. Claims 21-35, 38, 41, 44, 47, 50, 52-54 and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not teach or suggest the recited wavelengths and corresponding conductive film materials and film thicknesses. The prior art also does not teach or suggest that the depositing step occurs prior to the applying step.

Response to Arguments

4. Applicant argues that the references do not teach that the conductive film is deposited so as to be in contact with the opaque pattern. However, Hsue teaches that the conductive film is in contact with the opaque pattern. In Figure 3, Hsue teaches a side view of the mask. Hsue shows a substrate 30, a chrome film 31, a layer of chrome oxide 32 and a layer of conductive polymer 33 (paragraph 0016). Figure 4 shows a front view of the mask and that the layer 33 covers the patterns 31 and 32. These patterns are made of opaque material (paragraph 0018). Therefore, Hsue teaches that the conductive film covers all of the front face of the substrate as shown in Figure 3 and that the opaque pattern is in contact with and is permanently secured to the conductive film as the opaque chromium pattern is attached to the conductive film. Therefore, Applicant's arguments are not persuasive.

Action is Final

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,


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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Saleha Mohamedulla whose telephone number is (571) 272-1387. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MOHAMEDULLA, SALEHA R.
PATENT EXAMINER

February 17, 2004


MARK F. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700